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REMARKS

This paper is being presented in response to the final official action dated December 3, 2003, wherein: (a) claims 1-19 are pending; (b) claims 1-8 and 10-19 have been rejected under 35 U.S.C. § 103(a) as being obvious over Blatter et al. U.S. Patent No. 6,406,757 (the "757 patent") (or its published, international counterpart application, WO 99/41323) in view of Hirabayashi et al. U.S. Patent No. 4,900,583 (the "583 patent"); and, (c) claim 9 has been rejected under § 103(a) as being obvious over the '757 and '583 patents as applied to claims 1-8 and 10-19 and further in view of Kimble U.S. Patent No. 4,390,564 and Josefsson et al. U.S. Patent No. 5,323,485.

This paper also is being presented in accordance with 37 C.F.R. §§ 1.116(a) and 1.116(b) in order to present the rejected claims in better form for allowance or consideration on appeal. The amendments and arguments were not raised in prior communications to the patent office due to the applicants' good faith belief that all prior rejections had been overcome by amendment and/or argument. As described in more detail below, no new matter has been added by the requested amendments to the specification. Reconsideration and withdrawal of the rejections are respectfully requested in view of the foregoing amendments and following remarks.

This paper is timely filed as it is accompanied by a petition under 37 C.F.R. § 1.136(a) for an extension of time to file in the first month, and payment of the required extension fee.

I. Summary of the Amendments to the Specification

In compliance with 37 C.F.R. § 1.121(b)(1)(ii), certain paragraphs of the application have been amended to correct typographical errors relating to the units of measurement accompanying a description of wavelengths in the near infrared region of the electromagnetic spectrum. Specifically, paragraphs found at page 6, lines 9-22, and at page 7, line 22, to page 8, line 20, have been corrected to delete "m" (which is a well known abbreviation for meters) and substitute — μm — therefor (" μm " is a well known abbreviation for micrometers). Attached hereto as Appendix "A," are copies of two publications disclosing that the near-infrared region of the electromagnetic spectrum is known by those skilled in the art to be at wavelengths between about 0.75 micrometers and about 2.5 micrometers. The first of the two publications is the "McGraw-Hill Dictionary of Scientific and Technical Terms," 6th ed., p. 1405 (McGraw-Hill Co., New York, 2003), and the second publication is the "Academic Press Dictionary of Science and Technology," p. 1447 (Academic Press, Inc., San Diego, 1992). No new matter is introduced by the foregoing amendments. Accordingly, entry of the amendments are respectfully requested.

II. The 35 U.S.C. § 103(a) Rejections are Traversed

The § 103(a) rejections are traversed on the grounds that neither of the '757 patent nor its counterpart international publication (WO 99/71323) qualifies as prior art under any subsection of 35 U.S.C. § 102.

The present application is the U.S. national phase of International Application No. PCT/EP99/08003 filed October 21, 1999, which claims the priority benefit under 35 U.S.C. § 119 of the December 10, 1998, filing date of German Patent Application No. 19857045.7 (the "priority document"). Attached as Appendix "B" is a verified English-language translation of the German-language priority document. A review of the translation readily shows the identical disclosure found in the present application. Indeed the present application is substantively an English-language translation of the German-language priority document. In view of the common disclosure between the instant application and the priority document, and further in view of the priority benefit claim, the instant application effectively has a December 10, 1998, filing date for purposes of determining what qualifies as prior art against its claims. See 37 C.F.R. § 1.55 and MPEP. § 201.15 (8th ed., rev. 1, Feb. 2003). Thus, only art pre-dating December 10, 1998, can qualify as prior art under § 102 against the claims of the present application.

The '757 patent issued from an application (U.S. Serial No. 09/622,461) that is the U.S. national phase of International Application No. PCT/EP99/01009 filed February 12, 1999, and which satisfied the requirements of 35 U.S.C. § 371 on August 16, 2000. Consequently, the 35 U.S.C. § 102(e) date of the '757 patent is August 16, 2000. Because the § 102(e) date of the '757 patent is later than the actual filing date of the present application (October 21, 1999), the '757 patent, on its face, does not qualify as prior art against the claims of the present application. Consequently, the '757 patent cannot be used in support of a § 103(a) rejection of the claims.

The international application on which the '757 patent is based was published on August 19, 1999, as WO 99/41323. Consequently, the date on which this publication became effective as prior art under 35 U.S.C. §§ 102(a) or 102(b) is August 19, 1999. Because this date is later than the effective filing date of the present application (December 10, 1998), the international publication also does not qualify as prior art under any subsection of § 102. Accordingly, the international publication also cannot be used in support of a § 103(a) rejection of the claims.

Because the '757 patent is not prior art on its face, and because its counterpart international publication has been disqualified as prior art, no *prima facie* case of obviousness can be made on the basis of the remaining publications cited and applied in the final official action. Accordingly, reconsideration and withdrawal of the § 103(a) rejections are respectfully requested.



Bär et al., Serial No. 09/857,831
Page 5

CONCLUSION

In view of the foregoing, entry of amendments to the specification, reconsideration and withdrawal of the rejections, and allowance of all pending claims 1-19 are respectfully requested.

Should the examiner wish to discuss the foregoing, or any matter of form or procedure in an effort to advance this application to allowance, she is urged to contact the undersigned attorney.

Respectfully submitted,

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March 19, 2004

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On the cover: Representation of a fullerene molecule with a noble gas atom trapped inside. At the Permian-Triassic sedimentary boundary the noble gases helium and argon have been found trapped inside fullerenes. They exhibit isotope ratios quite similar to those found in meteorites, suggesting that a fireball meteorite or asteroid exploded when it hit the Earth, causing major changes in the environment. (Image copyright © Dr. Luann Becker. Reproduced with permission.)

Over the six editions of the Dictionary, material has been drawn from the following references: G. M. Garrity et al., *Taxonomic Outline of the Prokaryotes*, Release 2, Springer-Verlag, January 2002; D. W. Linzey, *Vertebrate Biology*, McGraw-Hill, 2001; J. A. Pechenik, *Biology of the Invertebrates*, 4th ed., McGraw-Hill, 2000; U.S. Air Force Glossary of Standardized Terms, AF Manual 11-1, vol. 1, 1972; F. Casey, ed., *Compilation of Terms in Information Sciences Technology*, Federal Council for Science and Technology, 1970; *Communications-Electronics Terminology*, AF Manual 11-1, vol. 3, 1970; P. W. Thrush, comp. and ed., *A Dictionary of Mining, Mineral, and Related Terms*, Bureau of Mines, 1968; A DOD Glossary of Mapping, Charting and Geodetic Terms, Department of Defense, 1967; J. M. Gilliland, *Solar-Terrestrial Physics: A Glossary of Terms and Abbreviations*, Royal Aircraft Establishment Technical Report 67158, 1967; W. H. Allen, ed., *Dictionary of Technical Terms for Aerospace Use*, National Aeronautics and Space Administration, 1965; *Glossary of Stinfo Terminology*, Office of Aerospace Research, U.S. Air Force, 1963; *Naval Dictionary of Electronic, Technical, and Imperative Terms*, Bureau of Naval Personnel, 1962; R. E. Huschke, *Glossary of Meteorology*, American Meteorological Society, 1959; *ADP Glossary*, Department of the Navy, NAVSO P-3097; *Glossary of Air Traffic Control Terms*, Federal Aviation Agency; *A Glossary of Range Terminology*, White Sands Missile Range, New Mexico, National Bureau of Standards, AD 467-424; *Nuclear Terms: A Glossary*, 2d ed., Atomic Energy Commission.

**McGRAW-HILL DICTIONARY OF SCIENTIFIC AND TECHNICAL TERMS,
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NDRO See nondestructive readout.

Ne See neon.

neallotype [SYST] A type specimen that, compared with the holotype, is of the opposite sex, and was collected and described later. { 'nē'al-ə,tīp }

NEA material See negative-electron affinity material. { 'nē'ā mē,tīr-ē-əl }

Neanderthal man [PALEON] A type of fossil human that is a subspecies of *Homo sapiens* and is distinguished by a low broad braincase, continuous arched browridges, projecting occipital region, short limbs, and large joints. { 'nē'an-dər,tāl 'man }

neap high water See mean high-water neaps. { 'nēp 'hī ,wōd-ər }

neap low water See mean low-water neaps. { 'nēp 'lō ,wōd-ər }

neap range [OCEANOGR] The mean semidiurnal range of tide when neap tides are occurring; the mean difference in height between neap high water and neap low water. Also known as mean neap range. { 'nēp ,rāŋ }

neap rise [OCEANOGR] The height of neap high water above the chart datum. { 'nēp ,rīz }

neaps See neap tide. { 'nēps }

neap tidal currents [OCEANOGR] Tidal currents of decreased speed occurring at the time of neap tides. { 'nēp 'tīd-əl ,kə-rāns }

neap tide [OCEANOGR] Tide of decreased range occurring about every 2 weeks when the moon is in quadrature, that is, during its first and last quarter. Also known as neaps. { 'nēp ,tīd }

Nearctic fauna [ECOL] The indigenous animal communities of the Nearctic zoogeographic region. { 'nē'ārd-ik 'fōn-ə }

Nearctic zoogeographic region [ECOL] The zoogeographic region that includes all of North America to the edge of the Mexican Plateau. { 'nē'ārd-ik 'zō-ō,jē-ə'grāf-ik ,rē-jōn }

near-earth object [ASTRON] An asteroid or comet whose orbit takes it within 1.3 astronomical units of the sun. { 'nīr 'ərth ,əbjekt }

near-end crosstalk [COMMUN] A type of interference that may occur at carrier telephone repeater stations when output signals of one repeater leak into the same end of the other repeater. { 'nīr ,end 'krōs,tōk }

nearest approach [NAV] The least distance between two objects having relative motion with respect to each other. { 'nīr-əst ə'prōčh }

nearest neighbors [CRYSTAL] Any pair of atoms in a crystal lattice which are as close to each other, or closer to each other, than any other pair. { 'nīr-əst 'nā-bərz }

near field [ACOUS] The acoustic radiation field that is close to an acoustic source such as a loudspeaker. [ELECTROMAG] The electromagnetic field that exists within one wavelength of a source of electromagnetic radiation, such as a transmitting antenna. { 'nīr ,fēld }

near-field noise See flow noise. { 'nīr 'fēld ,nōiz }

near-field scanning optical microscope [OPTICS] An optical microscope in which the intensity of light focused through a pipette with an aperture at its tip is recorded as the tip is moved across the specimen in a raster pattern at a distance of much less than a wavelength. { 'nīr 'fēld 'skan-ŋ 'əp-tā-kəl 'mī-krə-skōp }

near-field scanning optical microscopy [OPTICS] A technique for making optical measurements at dimensions much smaller than the wavelength of light, by scanning a nanometric detector or radiation source in proximity to a sample surface. Also known as scanning near-field optical microscopy. { 'nīr 'fēld ,skan-ŋ 'əp-tā-kəl 'mī-krās-kə-pē }

near-infrared radiation [ELECTROMAG] Infrared radiation having a relatively short wavelength, between 0.75 and about 2.5 micrometers (some scientists place the upper limit from 1.5 to 3 micrometers), at which radiation can be detected by photoelectric cells, and which corresponds in frequency range to the lower electronic energy levels of molecules and semiconductors. Also known as photoelectric infrared radiation. { 'nīr ,in-frə'red ,rād-ē'ā-shān }

near-infrared spectrophotometry [ANALYCHEM] Spectrophotometry at wavelengths in the near-infrared region, generally using instruments with quartz prisms in the monochromators and lead sulfide photoconductor cells as detectors to

observe absorption bands which are harmonics of bands at longer wavelengths. { 'nīr ,in-frə'red ,spek-trō-fə'tām-ə-trē }

nearly free electron method [SOLID STATE] A method of approximating the energy levels of electrons in a crystal lattice by considering the potential energy resulting from atomic nuclei and from other electrons in the lattice as a perturbation on free electron states. Abbreviated NFE method. { 'nīr-lē 'frē i'lek,trān ,meth-əd }

nearly isometric spaces [MATH] Two Banach spaces, A and B , such that for any numbers $c < 1$ and $d > 1$ there is a bijective mapping, f , from A to B such that the norm of $f(x)$ divided by the norm of x lies in the interval $[c,d]$. { 'nīr-lē ,ī-sə-me'trik 'spās-əz }

near miss [ORD] The strike of an explosive missile, especially of an aerial bomb, near but not on the object of attack, and usually close enough to cause effective damage. { 'nīr 'mīs }

near point [PHYSIO] The smallest distance from the eye at which a small object can be seen without blurring. { 'nīr ,pōint }

near ring [MATH] An algebraic system with two binary operations called multiplication and addition; the system is a group (not necessarily commutative) relative to addition, and multiplication is associative, and is left-distributive with respect to addition, that is, $x(y+z) = xy + xz$ for any x, y , and z in the near ring. { 'nīr 'rīŋ }

nearshore [OCEANOGR] An indefinite zone which extends from the shoreline seaward to a point beyond the breaker zone. { 'nīr ,shōr }

nearshore circulation [OCEANOGR] Ocean circulation consisting of both the nearshore currents and the coastal currents. { 'nīr ,shōr ,sər-kyə'lā-shān }

nearshore current system [OCEANOGR] A current system, caused mainly by wave action in and near the breaker zone, which contains four elements: the shoreward mass transport of water; longshore currents; seaward return flow, including rip currents; and the longshore movement of the expanded heads of rip currents. { 'nīr ,shōr 'kə-rānt ,sis-təm }

nearsightedness See myopia. { 'nīr'sīd-əd-nəs }

near stars [ASTRON] Those stars in the celestial neighborhood of the sun, sometimes taken as those 22 stars within 13 light-years of the sun. { 'nīr 'stārz }

nearthrosis [MED] A type of nonunion of broken ends of bones in which a cystic space resembling a joint cavity develops between poorly joined ends. { 'nē-ār'thrō-səs }

near-ultraviolet radiation [ELECTROMAG] Ultraviolet radiation having relatively long wavelength, in the approximate range from 300 to 400 nanometers. { 'nīr 'ul-trə'vī-let ,rād-ē'ā-shān }

near wilt [PL PATH] A fungus disease of peas caused by *Fusarium oxysporum pisi*; affects scattered plants and develops more slowly than true wilt. { 'nīr ,wilt }

neat cement grout [MATER] Grout made from a mixture of cement and water. { 'nēt si'ment ,graut }

neat line [CIV ENG] The line defining the limits of an aspect of construction, such as an excavation or a wall. Also known as net line. [MAP] That border line which indicates the limits of an area shown on a map or chart. { 'nēt ,līn }

neat plaster [MATER] A base-coat plaster, having sand added at the job location. { 'nēt ,plas-tər }

neatsfoot oil [MATER] Pale-yellow oil with unusual odor; soluble in organic solvents and kerosene; obtained by boiling shinbones and hoofless feet of cattle; used to treat leather, as a lubricant, and to oil wool. Also known as bubulum oil; hoof oil. { 'nēts,fūt ,ōil }

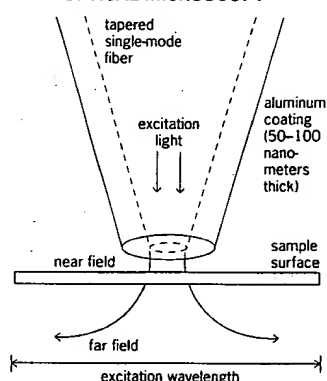
neat soap [MATER] Soap in the molten state formed during manufacture, especially after fitting and settling out of nigre and lye. { 'nēt ,sōp }

Nebaliacea [INV ZOO] A small, marine order of Crustacea in the subclass Leptostraca distinguished by a large bivalve shell, without a definite hinge line, an anterior articulated rostrum, eight thoracic and seven abdominal somites, a pair of articulated furcal rami, and the telson. { 'nə,bā-lē'ā-shə }

Nebraskan drift [GEOL] Rock material transported during the Nebraskan glaciation; it is buried below the Kansan drift in Iowa. { 'nə'bras-kən 'drift }

Nebraskan glaciation [GEOL] The first glacial stage of the Pleistocene epoch in North America, beginning about 1,000,000 years ago, and preceding the Aftonian interglacial stage. { 'nə'bras-kən glā-sē-ā-shān }

NEAR-FIELD SCANNING OPTICAL MICROSCOPY



Fiber-optic probe used in near-field scanning optical microscopy and its position relative to the sample surface.



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Neanderthal man [né an'dər thol'] *Anthropology*. any of a group of hominids who lived in Europe, Africa, and the Near East between about 125,000 years ago and about 35,000 years ago; now often considered a separate species, *Homo neanderthalensis*, but formally classified as a subspecies, *Homo sapiens neanderthalensis*. They were distinguished from anatomically modern humans, *Homo sapiens*, by a prominent brow ridge, a receding chin, midfacial prognathism, and a cranial capacity (1450 cc) slightly larger than the modern average. (Named for the valley in northwestern Germany where the first Neanderthal skeleton was found in 1856.)



Neanderthal skull

neap *Oceanography*. relating to or designating neap tide, the tide that has the least range between high and low water.

neap range *Oceanography*. the mean semidiurnal range of the tide during a period of neap tides, generally 10–30% less than the mean tidal range; measured by taking the mean difference between neap high and low water.

neap rise *Oceanography*. the height of neap high water above the tidal datum.

neap tidal currents *Oceanography*. tidal currents that move more slowly than usual because of the decreased range of neap tides.

neap tide *Oceanography*. a twice-monthly tide of minimal range that occurs when the earth, sun, and moon are at right angles to each other, decreasing the total tidal force exerted on the earth.

nearctic *Ecology*. of or relating to the Nearctic region or its fauna.

Nearctic region *Ecology*. a zoogeographic region of the earth consisting of the area of the Americas that extends north from the Mexican Plateau to the Arctic Circle, and including the Canadian, Californian, Rocky Mountain, and Allegheny subregions.

near-end crosstalk *Telecommunications*. 1. in disturbed channels, interference that is propagated in a direction opposite to that of the propagation of the current in the channel causing the interference. 2. in carrier telephone repeater stations, interference that occurs when output signals of one carrier overlap onto the same end of the other repeater.

nearest-neighbor analysis *Molecular Biology*. an examination of the base sequences in a given nucleic acid by determining the frequency with which a given base occurs adjacent to a second given base.

near field *Acoustics*. 1. a space in which the sound from a nearby source does not behave predictably because particle velocity may not be in the same direction as wave motion. 2. a region in the sound field that is closer than a wavelength away from the source.

near-field diffraction see FRESNEL DIFFRACTION.

near-field scanning optical microscope *Optics*. a microscope that measures the intensity of light passing through an optical fiber as it systematically moves over a specimen, thus allowing a magnified image of the surface structure of the specimen to be produced on a cathode-ray screen.

near-infrared radiation *Electromagnetism*. electromagnetic radiation with wavelengths in the range of about 0.75 to 2.5 micrometers.

near-infrared reflectance spectroscopy *Spectroscopy*. spectroscopic techniques involving infrared radiation from the near infrared band (approximately 0.75 to 3.0 micrometers) wherein reflection from a surface is acceptable, as opposed to the necessary use of a diffraction grating for wavelengths of the normal infrared region.

near-infrared spectrophotometry *Analytical Chemistry*. the analysis of a chemical substance by measuring its absorption or attenuation of electromagnetic radiation at monochromatic wavelengths from 0.78 to 3.0 micrometers.

near letter quality *Computer Technology*. an output of a dot-matrix or other printer that is enhanced by multiple printing to approach the quality of a laser or daisy-wheel printer.

near miss *Ordnance*. the impact or burst of an explosive missile that misses the target but is near enough to cause effective damage; usually applied to aerial bombs. *Navigation*. an instance in which two aircraft or other craft narrowly avoid colliding with each other. *Artificial Intelligence*. in human-guided training of a machine learning system, a carefully chosen example that is only slightly different from a previous example, making it easy for the program to determine the difference between the new example and its existing model and to determine the significance of this difference.

near net shape *Metallurgy*. the attribute of a shaped part, whether cast, forged, or sintered from powder, that requires little machining in its finishing operation.

near point *Physiology*. the nearest point at which the eye can clearly see an object.

nearshore *Oceanography*. an indefinite area between the shoreline and the offshore zone beyond the breakers.

nearshore circulation *Oceanography*. circulation of water caused by nearshore currents, coastal currents, and the upwelling associated with some currents.

nearshore current system *Oceanography*. collectively, the currents operating shoreward of the coastal current system.

nearside *Astronomy*. the hemisphere of the moon that faces earth.

nearsightedness *Medicine*. the popular name for myopia, a condition in which vision is clear only at a short distance. Thus, **near-sighted**.

near stars *Astronomy*. the stars nearest the sun within some specified limit.

nearthrosis *Medicine*. a new joint, either a false joint that arises from a fracture, or a new joint that is the result of a total joint replacement operation.

near-ultraviolet radiation *Electromagnetism*. ultraviolet radiation having wavelengths in the range of about 300 to 400 nanometers.

near wilt *Plant Pathology*. a disease of peas caused by the fungus *Fusarium oxysporum pisi* and characterized by wilted plants and red discoloration; it affects scattered plants and develops more slowly than true wilt.

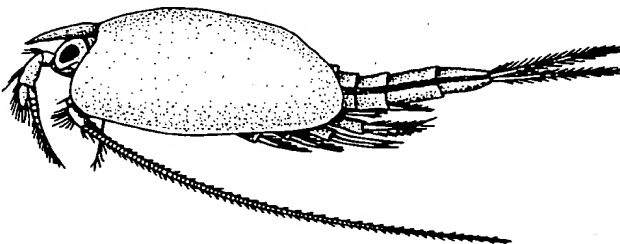
neat cement *Materials*. cement that is mixed with water only, without the addition of sand.

neatline *Cartography*. any of the lines on a map, frequently concurrent with parallels and meridians, that form the border of the area to be depicted. Also, **SHEET LINE**.

neat plaster *Materials*. plaster containing no admixture other than hair or fiber.

neat's-foot oil *Materials*. a pale yellow oil derived by boiling the feet and shinbones of cattle; used primarily in treating and preserving leather. (From an older use of the word *neat* to mean a cow or ox.)

Nebaliacea *Invertebrate Zoology*. an order of primitive, shrimplike, marine malacostracan crustaceans, with a bivalve shell and an articulated rostrum on the head.



Nebaliacea